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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,068	01/05/2005	Hirohisa Tanaka	71465.00010	5115
57362 7590 07/05/2007 AKERMAN SENTERFITT 801 PENNSYLVANIA AVENUE N.W. SUITE 600 WASHINGTON, DC 20004			EXAMINER VANOU, TIMOTHY C	
			ART UNIT 1754	PAPER NUMBER
			MAIL DATE 07/05/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Interview Summary</b>	Application No.	Applicant(s)	
	10/520,068	TANAKA ET AL.	
	Examiner	Art Unit	
	Timothy C. Vanoy	1754	

All participants (applicant, applicant's representative, PTO personnel):

(1) Timothy C. Vanoy. (3) \_\_\_\_\_

(2) Ms. Kristina Castellano, applicants' attorney. (4) \_\_\_\_\_

Date of Interview: 28 June 2007.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☒ Yes e) ☐ No.

If Yes, brief description: Unofficial, proposed 116 Amendment.

Claim(s) discussed: pending.

Identification of prior art discussed: JP 11-262,663 A.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

  
\_\_\_\_\_  
Examiner's signature, if required

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Att'y. argued that there is no heat treatment in the process of JP-663. Exm'r. notes that JP-663 discloses heat treatment in para. no. 0020 in the English translation. Exm'r. considered the 132 Declaration to show the criticality of using Pt acetylacetonate as an ingredient in making the composition (as opposed to using Pt nitrate as an ingredient). Att'y. was wondering if the independent claims should be limited to the use of Pt acetylacetonate. Exm'r. noted that the use of Pt acetylacetonate was already taught in para. 0018 in JP-663 English translation.

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

#### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

#### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

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Fax: 202.318.1288

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To: Examiner Vanoy  
Company: U.S. Patent and Trademark Office  
Fax Number: 571-273-8158

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Total Pages 10  
Including Cover:

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From: Kristina M. Castellano  
Sender's Direct Line: (571) 278-8233  
Date: June 27, 2007  
Our Ref: 71465.0010

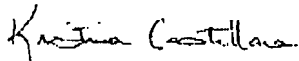
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Comments: USSN: 10/520,068

Dear Examiner Vanoy,

Thank you for returning my call today. Attached is the Proposed Amendment that I would like to briefly discuss with you at your convenience. I will phone you tomorrow afternoon or Friday morning to allow you an opportunity to review the attached document. Thank you in advance for your consideration.

Best regards,



Kristina M. Castellano, Reg. No. 41,092

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## EXPEDITED PROCESSING REQUESTED

Attorney Docket No.: 71465.0010

Customer No.: 57362

### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Hirohisa TANAKA et al.

Group Art Unit: 1754

Application No.: 10/520,068

Examiner: Timothy C. VANOY

Filed: January 5, 2005

Confirmation No.: 5115

For: METHOD FOR PRODUCING PEROVSKITE-TYPE COMPOSITE OXIDE

### **PROPOSED** **AMENDMENT UNDER 37 C.F.R. § 1.116**

MAIL STOP AF  
Commissioner for Patents  
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Alexandria, VA 22313-1450

### **INTRODUCTORY REMARKS**

Sir:

In response to the Final Office Action dated June 5, 2007, please amend the above-identified application as follows:

**CLAIMS:** Amendments to the claims begin on Page 2.

**REMARKS:** Remarks begin on Page 6.

{DC014466:1}

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Amendment Under 37 C.F.R. § 1.116  
U.S. Application No.: 10/520,068

Attorney Docket No.: 71465.0010  
Customer Number 57362

### AMENDMENTS TO THE CLAIMS:

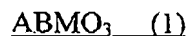
This listing of claims replaces all prior versions, and listings, of claims in the above-identified application.

1. (Currently Amended) A method for producing a perovskite-type composite oxide, which comprises the steps of:

preparing a precursor of the perovskite-type composite oxide by mixing at least an organometal salt of elementary components constituting the perovskite type composite oxide, including organometal salts of at least one noble metal, salt of a noble metal with another elementary component constituting the perovskite-type composite oxide, and

heat-treating the precursor of the perovskite-type composite oxide;

wherein the perovskite-type composite oxide is a perovskite-type composite oxide represented by the following general formula (1):



wherein A represents at least one element selected from the group consisting of rare-earth elements, alkaline earth metals, and Ag; B represents at least one element selected from the group consisting of Al and transition metals excluding platinum group elements and rare-earth elements; and M represents one or more platinum group elements.

2. (Canceled).

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3. (Currently Amended) The method for producing a perovskite-type composite oxide according to claim 1 [[2]], wherein the other elementary components are prepared as alkoxides of the respective elements.

4. (Currently Amended) The method for producing a perovskite-type composite oxide according to claim 1 [[2]], wherein the other elementary components are prepared as a coprecipitate of salts of the respective elements or a citrate complex of the respective elements.

5. (Currently Amended) The method for producing a perovskite-type composite oxide according to claim 1 [[2]], wherein the part of the elementary components is one or more noble metals.

6. (Original) The method for producing a perovskite-type composite oxide according to claim 1, wherein the organometal salts of the elementary components are organic carboxylic acid salts of the elementary components and/or a metal complex of the elementary components including at least one selected from the group consisting of  $\beta$ -diketone compounds,  $\beta$ -ketoester compounds and  $\beta$  dicarboxylic ester compounds.

7. (Canceled).



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8. (Currently Amended) The method of claim 1 [[7]], wherein the perovskite-type composite oxide is a perovskite-type composite oxide represented by the following general formula (2):



wherein A represents at least one element selected from the group consisting of Y, La and Nd; A' represents at least one element selected from the group consisting of Ce, Pr, Mg, Ca, Sr, Ba, and Ag; B represents at least one element selected from the group consisting of Cr, Mn, Fe, Co, Ni, Cu and Al; and B' represents at least one element selected from the group consisting of Ru, Rh, Pd, Ir, and Pt;

wherein x represents an atomic ratio satisfying the relation  $0 \leq x \leq 0.5$  and y represents an atomic ratio satisfying the relation:  $0 < y \leq 0.5$ .

9. (Previously Presented) A method for producing a perovskite-type composite oxide, comprising:

preparing a precursor of the perovskite-type composite oxide by a method comprising mixing

(A) an organometal solution comprising one or more organometal salts of elementary components of the perovskite-type composite oxide including organometal salts of at least one noble metal, and

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(B) an alkoxide solution comprising one or more alkoxides of other elementary components of the perovskite-type composite oxide;  
  
to form a homogenous mixed solution; and  
  
heating the precursor to obtain a perovskite-type composite oxide.

10. (Previously Presented) The method of claim 9, wherein said preparing further comprises precipitating the homogenous mixed solution on hydrolysis.

11. (Previously Presented) The method of claim 10, wherein said preparing further comprises, distilling under reduced pressure to obtain the precursor of the perovskite-type composite oxide.

12. (Previously Presented) The method of claim 9, wherein said heating is performed at a temperature of 500°C to 1000°C.

13. (Previously Presented) The method of claim 9, wherein said heating is performed at a temperature of 500°C to 850°C under an oxidative atmosphere.

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### REMARKS

Claims 1, 3-4, 6, and 8-13 are pending in this application. All of the claims were rejected in the June 5, 2007 Office Action (the "Action"). Reconsideration and withdrawal of the rejection and allowance of all claims are respectfully requested in view of the following remarks.

As a preliminary matter, Applicants note that claim 1 is amended herein to incorporate the recitations of claim 7. Claim 1 is also amended to more clearly recite how a precursor of the perovskite-type composite oxide is prepared from elementary components of the perovskite-type composite oxide. For the sake of clarity, Claim 1 is amended herein to explicitly recite that the organometal salts include salts of a noble metal component of the perovskite-type composite oxide. No new issues are believed to be raised by these amendments. Claims 2, 5 and 7 are canceled herein.

### *Claim Rejection Under 35 U.S.C. §102*

Claims 1-13 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Japan Patent Document No. 11-262,663 ("JP-663"). Applicants respectfully traverse this rejection.

Applicants' representative mistakenly indicated in the prior amendment that JP-663 does not teach or suggest mixing organometal salts. This is not the case.  $\text{Pt}(\text{C}_5\text{H}_7\text{O}_2)_2$  (palladium acetyl acetonato) described in JP-663 is believed to be an organometal salt. Applicants sincerely apologize for this error and did not intend to mislead the Examiner or the Patent Office.

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The Examiner is thanked for his consideration of the Declaration Under 37 C.F.R. §1.132 submitted with the prior amendment on April 27, 2007. Applicants intended to explain the Declaration in more detail in the prior Amendment, and will do so herein.

Applicants respectfully traverse the anticipation rejection at least because JP-663 does not teach the presently claimed method that includes forming a precursor of the perovskite-type composite oxide by mixing an organometal salt of a noble metal with other elementary components of the perovskite-type composite oxide, and then heat treating the precursor.

In JP-663 (See Example 1), an alkoxide of strontium ( $\text{Sr}(\text{OC}_3\text{H}_7)_2$ ) and an organometal salt of platinum is mixed, then the resulting mixture is added to a support dispersion liquid and baked to form a Pt composite oxide layer. As shown in Example 1 of JP-663, a Pt composite oxide layer is formed by supporting a mixture with  $\text{MgAl}_2\text{O}_4$ . The perovskite-type composite oxide resulting from the methods of JP-663 does not have the structure and advantages of the present invention.

In particular, in the present invention, a perovskite-type composite oxide having a specific structure can be produced by mixing an organometal salt of a noble metal with the other elementary component, and subjecting the resulting mixture to heat treatment. The perovskite-type composite oxide thus obtained from the present methods has the significant effect that a noble metal can be effectively dispersed in the perovskite-type composite oxide to improve the rate of solid solution. This improved result is demonstrated for example, in the Declaration Under 37 C.F.R. §1.132 submitted on April 27, 2007.

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As can be seen from the Declaration, although Example 1 using organometal salts of noble metal has the same written composition as Comparative Example 1 using nitrates, Example 1 has a higher rate of solid solution, and demonstrates self-regenerative function (solid solution and deposition), as compared to Comparative Example 1. As shown at Table 4 of the Declaration, a perovskite-type composite oxide made using the presently claimed methods (Example 1) has a much higher rate of solid solution (93%), than a perovskite type composite oxide (Comparative Example 1) having a similar written composition, but made using a method that does not include preparing a precursor by mixing the elementary components (57%).

The results also show that purifying performance after endurance test is also improved. For example, as shown in Table 3, the 20% and 50% purification temperatures for Example 1 were much lower than for Comparative Example 1. Additionally, the 400° C purification rate was much higher for Example 1 than for Comparative Example 1.

Further, in the perovskite-type composite oxide of the present invention, the noble metals can be finely and highly dispersed therein and can maintain their high catalytic activities even in long-term use because of a self-regenerative function, in which the noble metal undergoes repetitive solid solution under an oxidative atmosphere and deposition under a reduced atmosphere.

For at least these reasons, Applicants respectfully submit that the presently claimed methods are not anticipated by the JP-663 reference, and reconsideration and withdrawal of the

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rejection are earnestly solicited. Because the only rejection is believed to be overcome herein, Applicants respectfully request allowance of the present claims.

If the Examiner believes that there is any issue that could be resolved by a telephone or personal interview, the Examiner is respectfully requested to contact one of the undersigned attorneys at the telephone number listed below.

Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee for such an extension is to be charged to Deposit Account No. 50-0951.

Respectfully submitted,

\_\_\_\_\_  
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